

DOCKET NO. PHN16-224A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Friedl et al.	)	Examiner: Dinh, T.
	)	
Application No.: 09/024,637	)	Art Unit: 2827
	)	
Filed: 02/17/1998	)	
	)	
For: SYNTHETIC RESIN CAPPING LAYER	)	
ON A PRINTED CIRCUIT	)	

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Commissioner for Patents  
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**REQUEST FOR RECONSIDERATION**

Sir:

In response to the Final Office Action of January 2, 2003, Applicants respectively request that the above-identified application be reconsidered in view of the remarks that follow, that each of the presently pending claims be allowed, and that the application be passed to issue.

**REMARKS**

Claims 8 and 11-14 are pending.

Claims 8 and 11-14 are rejected under 35 U.S.C. §103(a) over Matsumoto et al.

(US 5,406,027), hereafter "Matsumoto," in view of Prescott (US 3,564,164) and von Bonin et al. (US 4,992,481), hereafter "Bonin."

The above-referenced rejection is defective because Matsumoto, Prescott, and Bonin, taken alone or in any combination, fail to teach or suggest each and every feature of the claimed invention as required by 35 U.S.C. §103.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

Claim 8 sets forth a printed circuit which is provided with a synthetic resin capping layer, wherein the capping layer comprises a "foam-forming reactive injection-moulding material exhibiting a variation of mechanical properties in a direction at right angles to a surface of the capping layer, characterized in that **said variation of the mechanical properties comprises a continuous increase in hardness of the capping layer**" (emphasis added). Claim 11 includes a similar feature.

In the second full paragraph of section 2 of the above-referenced Office Action, the Examiner alleges that Matsumoto's capping layer 17 "inherently possesses exhibits a variation of mechanical properties ... in a direction at right angles ... to a surface of the capping layer such as the variation of the mechanical properties comprises a continuous

increase in hardness of the capping layer.” The Examiner then contradicts this allegation in the first paragraph on page 3 of the Office Action by stating that “Matsumoto does not show ... a continuous increase in hardness of the capping layer.” Clarification of the Examiner’s contradictory position regarding this claim feature is respectfully requested.

Matsumoto, as admitted by the Examiner, fails to disclose a capping layer comprising a “foam forming reactive injection moulding material” (Office Action, page 3, first paragraph). Applicants agree. Applicants also submit that Matsumoto does not teach, suggest, nor recognize the advantages provided by forming a capping layer using a material exhibiting a continuous variation of mechanical properties in a direction at right angles to a surface of the capping layer, wherein the “variation of the mechanical properties comprises a continuous increase in hardness of the capping layer.” Indeed, throughout the prosecution of the above-referenced patent application, the Examiner has failed to provide any evidence supporting the allegation that the capping layer in Matsumoto inherently “exhibits a variation of mechanical properties” as claimed.

The Examiner relies on Prescott as allegedly teaching a capping layer comprising a foam forming reactive injection moulding material. Applicants submit that while Prescott may teach the use of an injected foam material 30, the foam material 30 does not exhibit a “variation of mechanical properties in a direction at right angles to a surface of the capping layer, characterized in that said variation of the mechanical properties comprises a continuous increase in hardness of the capping layer” as set forth in claim 8. On the contrary, Prescott merely discloses (see, e.g., col. 3, lines 33-40) that the foam,

when fully cured, "is rigid, has a low density, exhibits good strength and is virtually chemically inert." Thus, Prescott and Matsumoto both fail to teach or suggest a foam-forming reactive injection-moulding material exhibiting a continuous variation in mechanical properties, and that the variation in mechanical properties comprises a continuous variation in the hardness of the capping layer.

The Examiner attempts to overcome this glaring deficiency in both Matsumoto and Prescott by relying on the reference to Bonin. In particular, the Examiner alleges (Office Action, page 3, third paragraph) that "Bonin teaches a foam material having mechanical properties (column 1, lines 58-61) including a mechanical strength and harness increase (column 9, lines 25-30)."

Bonin discloses fire-retardant elements that are installed in a moist state. As detailed in column 9, lines 23-27, Bonin discloses that "the mechanical strength and hardness increase" as the fire-retardant elements dry out. Contrary to claim 8, however, Bonin does not disclose that the fire-retardant elements exhibit a **"variation of mechanical properties in a direction at right angles to a surface ..., characterized in that said variation of the mechanical properties comprises a continuous increase in hardness."** Bonin is completely silent with regard to this claimed feature.

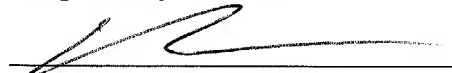
As detailed above, none of the references cited by the Examiner, taken alone or in any combination, teach or suggest, *inter alia*, a "capping layer comprising a foam-forming reactive injection-moulding material exhibiting a variation of mechanical properties in a direction at right angles to a surface of the capping layer, characterized in

that said variation of the mechanical properties comprises a continuous increase in hardness of the capping layer." Accordingly, Applicants respectfully request withdrawal of the rejection under 35 U.S.C. §103(a) and allowance of claims 8 and 11-14.

If the Examiner believes that anything further is necessary to place the application in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney at the telephone number listed below.

Dated: 3/25/03

Respectfully submitted,



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